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REMARKS / ARGUMENTS

Claim Rejections – 35 USC § 102

The Office Action has again rejected claims 1-30 under 35 U.S.C. § 102(e) as being anticipated by United States Patent 6,363,319 (Hsu). In response thereto, Applicant has amended each of the four independent claims, namely claims 1, 15, 29 and 30, to further specify that connectionless traffic is routed based on a traffic metric which has been dynamically adjusted based on determined resource requirements of connection-oriented traffic. This added limitation further distinguishes over Hsu, which is not concerned with the routing of connectionless traffic.

Hsu teaches only a method and apparatus for dynamically selecting an optimal, least-cost path for *connection-oriented* traffic. This is clearly and unequivocally stated by Hsu: “The present invention is a *constraint-based* route selection technique that supports establishing *Multi-protocol Label Switching (MPLS)* label switched paths through *explicit routing*” (at col. 2, lines 66-67 to col. 3, lines 1-2). As is well known in the art, the expressions “constraint-based routing” and “explicit routing” mean that the traffic is *connection-oriented*, i.e. the path through the network is predefined. Furthermore, MPLS is known as a *connection-oriented* protocol. Therefore, Hsu only determines cost metrics to be used for routing connection-oriented traffic, i.e. constraint-based traffic where the route through the network is “explicit”, i.e. predefined. However, Hsu does not deal whatsoever with the determination of cost metrics to be used for routing connectionless traffic. Therefore, Hsu cannot be said to anticipate the claimed limitations of adjusting a traffic metric to be used for routing *connectionless* traffic based on connection-oriented traffic and then routing the *connectionless* traffic based on resource requirements of the connectionless traffic metric.

The Office Action further states that “Applicants clearly have failed to explicitly identify specific claim limitations which would define a patentable distinction over

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the prior art." With respect, Applicant has repeatedly identified the distinguishing limitation in the four previous responses (*i.e.* the responses filed to the various Office Actions mailed March 12, 2003, August 8, 2003, March 16, 2004, and July 8, 2004) and has further identified the distinction in a telephone interview conducted on July 8, 2004, namely that Applicant's invention dynamically adjusts the connectionless traffic metric based on the determined resource requirement of the connection-oriented traffic. Applicants have now amended this claim language for even greater clarity to recite dynamically adjusting a respective traffic metric to be used for routing connectionless traffic based on the determined resource requirement of the connection-oriented traffic; and routing the connectionless traffic based on the connectionless adjusted traffic metric. Applicant's claimed invention enables efficient sharing of network resources between both connection-oriented traffic and connectionless traffic. The present invention accomplishes this by adjusting the traffic metric to be used for routing connectionless traffic in response to the resources allocated to the connection-oriented traffic. As noted above, Hsu does not even refer to traffic metrics to be used for routing connectionless traffic, let alone describe or suggest that such a traffic metric can be adjusted based on the resources allocated to the connection-oriented traffic. Since Hsu does not even mention a traffic metric for routing connectionless traffic, there are absolutely no grounds whatsoever for rejecting these claims on the basis that they are anticipated by Hsu. Nevertheless, to further distinguish over Hsu, Applicant has amended each of the independent claims to further recite that *connectionless traffic is routed based on the adjusted traffic metric*. Since Hsu does not address the routing of connectionless traffic, this added limitation further distinguishes over Hsu.

With respect, these repeated rejections seem to be based on a fundamental (and fairly widespread) misconception about connection-oriented and connectionless traffic metrics. In a network that shares its resources between connectionless and connection-oriented traffic, there are actually two different cost metrics, one used to route connectionless traffic (and previously referred to by Applicants as a "connectionless traffic metric") and another used to route connection-oriented traffic. Connection-oriented traffic (e.g. the MPLS protocol) follows a predefined path across the network. On the other hand, connectionless

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traffic (e.g. IP, ATM and frame relay) is usually routed according to a shortest-path or least-cost protocol based on link delay or available bandwidth, determined for every connectionless packet in the network. Connection-oriented and connectionless traffic are thus entirely different types of traffic and their respective metrics used in their routing are also different.

The claimed invention is a solution to the problem articulated in the background section of the present application, a portion of which is reproduced below for the examiner's convenience: "Both connection-oriented and connectionless traffic may be carried over shared network infrastructure. This situation is normally accommodated by adjusting the provisioned IGP metric to reflect an average anticipated amount of bandwidth allocated to the connection-oriented traffic. However, this raises a difficulty in that the amount of resources (e.g. bandwidth) actually available for use by connectionless traffic, on any link, will vary with the resources reserved for connection-oriented traffic. Accordingly, during periods of heavy demand for connection-oriented traffic, the provisioned IGP metric for a link may provide an inflated indication of the amount of bandwidth actually available for connectionless traffic. This can easily result in undesirable congestion on the link. Conversely, during periods of low demand for connection-oriented traffic, the provisioned IGP metric for a link may provide a deflated indication of the amount of bandwidth actually available for connectionless traffic. This can result in undesirable under-utilization of the link." Applicant's claimed invention solves this problem by determining a resource requirement of the connection oriented traffic; dynamically adjusting a respective traffic metric to be used for routing connectionless traffic based on the determined resource requirement of the connection oriented traffic; and routing the connectionless traffic through the shared network element based on the adjusted traffic metric.

As was noted at the outset, Hsu states that his invention "is a *constraint-based* route selection technique that supports establishing *Multi-protocol Label Switching (MPLS)* label switched paths through *explicit* routing". Applicant's invention determines a resource requirement of the connection-oriented traffic and dynamically adjusts a traffic metric to be used for routing connectionless traffic based on the resource requirement of the connection-

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oriented traffic. Hsu clearly does not teach anything related to traffic metrics to be used for routing connectionless traffic because Hsu is only concerned with connection-oriented traffic. With respect, how can Hsu anticipate this claim limitation if Hsu doesn't even mention connectionless traffic? With respect, there is simply no mention anywhere in Hsu of metrics to be used for routing connectionless traffic. Therefore, the claimed limitation that a traffic metric to be used for routing connectionless traffic is adjusted based on the determined resource requirement of the connection-oriented traffic is simply not anticipated by Hsu. Furthermore, Hsu does not teach the added limitation of routing the connectionless traffic based on the connectionless traffic metric.

For the reasons set forth above, it is respectfully submitted that Hsu does not teach the present invention as claimed by claims 1-30 as now amended. Therefore, Applicant respectfully submits that the anticipation rejection of claims 1-30 is improper. Applicant respectfully traverses this anticipation rejection and courteously requests that it be withdrawn.

Applicant has voluntarily amended the summary of the invention and the abstract by replacing the expression "connectionless traffic metric" with the expression "traffic metric to be used for routing connectionless traffic", so as to make the specification consistent with the amended claims. It is respectfully submitted that no new matter has been added.

Reconsideration of this application is respectfully requested.

Respectfully submitted,
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